

PROJECT: California High Speed Train EIR/EIS**Storage Yard & Maintenance Facility****Sacramento****CONCEPTUAL CONSTRUCTION COST ESTIMATE**

Item No.	DESCRIPTION	UNIT	UNIT COST (2003\$)	QUANTITY	Estimated Cost	Category Total Cost
1	Site Clearing					
	Site Clearing	HECT	\$7,700.00	9.40	\$72,380	
	Site Demolition	HECT	\$800,000.00	9.40	\$7,520,000	
						\$7,592,380
2	Earthwork					
	Grading Site- Cut & Fill 1M Average	M3	\$7.50	94,000	\$705,000	
						\$705,000
3	Paving & Surfacing					
	Driveway / Service Road	M2	\$40.00	16,800	\$672,000	
	Paved Area/Parking Spaces	M2	\$40.00	20,000	\$800,000	
	Maint. Path	M	\$150.00	3,200	\$480,000	
						\$1,952,000
4	Piped Utilities					
	Drainage & Sanitary- track drainage	M	\$164.00	9,200	\$1,508,800	
	Drainage & Sanitary- sewer system- allow	M	\$260.00	1,500	\$390,000	
	Connection to Exist. Lines	Allow	\$100,000.00	1	\$100,000	
	Sanitary Pump Station	EA	\$80,000.00	1	\$80,000	
	Oil/ Water Separator	EA	\$135,000.00	1	\$135,000	
	Exist. Utility Lines Relocation/Protection	HECT	\$2,100,000.00	9.40	\$19,740,000	
	Water Distribution- allow	Allow	\$200,000.00	1	\$200,000	
						\$22,153,800
5	Site Improvements					
	Alum. Chain Link Fence	M	\$110.00	4,000	\$440,000	
	Signs	Allow	\$30,000.00	1	\$30,000	
	Landscaping	Allow	\$100,000.00	1	\$100,000	
						\$570,000
6	Track work					
	Ballasted Track Incl. Ballast and subballast	M	\$430.00	9,200	\$3,956,000	
	Turnouts, no. 15 with Conc. Ties	EA	\$140,000.00	11	\$1,540,000	
	Diamond Crossover, no. 15 with Conc. Ties	EA	\$600,000.00	2	\$1,200,000	
	Heavy Duty Rubber Grade Crossing	Allow	\$300,000.00	1	\$300,000	
						\$6,996,000
7	Yard Electrical Work					
	Site Lighting, Distribution, High Mast Poles	EA	\$35,000.00	25.00	\$875,000	
	Electrical service to yard -- 480v	Allow	\$500,000.00	1	\$500,000	
	CCTV & Security System	Allow	\$200,000.00	1	\$200,000	
	Communication System	Allow	\$300,000.00	1	\$300,000	
						\$1,875,000
8	Traction Power					
	Double Ended SS	EA	\$5,000,000.00	1.0	\$5,000,000	
	OCS Incl. Hardware, Poles & Foundation	M	\$360.00	9,200	\$3,312,000	
						\$8,312,000
9	Train Control					
	Yard Train Control	Allow	\$1,500,000.00	1	\$1,500,000	
						\$1,500,000
10	Service and Inspection Facility Incl. Electrical & Mechanical Work					
	Service & Inspection Facility	M2	\$1,800.00	2,700	\$4,860,000	
	Inspection Pit	M	\$2,300.00	500	\$1,150,000	
	Inspection Pit Rail Support	M	\$945.00	500	\$472,500	
	Car Wash Building	M2	\$1,300.00	1,000	\$1,300,000	
	Wheel Repair Facility	M2	\$1,800.00	700	\$1,260,000	
						\$9,042,500
11a	Maintenance Shop Equipment, Tools and Supplies-					
	Storage Equipment	LS	\$280,000.00	1	\$280,000	
	Shop Equipment	LS	\$600,000.00	1	\$600,000	
	Shop Work Station	LS	\$60,000.00	1	\$60,000	
	Cleaning Equipment	LS	\$80,000.00	1	\$80,000	
	Car Component Repair & Test Equipment	LS	\$250,000.00	1	\$250,000	
	Wheel Truing Machine	Ea.	\$1,500,000.00	1	\$1,500,000	
	Welding Equipment	LS	\$60,000.00	1	\$60,000	
	Battery Equipment	LS	\$25,000.00	1	\$25,000	
	Prefab. Storage Buildings	LS	\$40,000.00	1	\$40,000	
	Traveling Manlifts	LS	\$200,000.00	1	\$200,000	
	Material Lift	LS	\$30,000.00	1	\$30,000	
	Bridge Crane - 3ton Capacity	Ea.	\$40,000.00	1	\$40,000	
	Jib Cranes- Various Capacity	Ea.	\$20,000.00	2	\$40,000	
	Forklifts	Ea.	\$35,000.00	4	\$140,000	
	Tools & Supplies	Allow	\$100,000.00	1	\$100,000	
11c	Car Wash					
	Storage	LS	\$4,000.00	1	\$4,000	
	Central Vacuum Cleaning system	LS	\$40,000.00	1	\$40,000	
	Steam Cleaner Pressure Washer	LS	\$80,000.00	1	\$80,000	
	Car Wash Equipment Installation & Plumbing	LS	\$900,000.00	1	\$900,000	
						\$4,469,000
	Environmental Mitigation					
	Excluded					
						\$0
	Sub-Total					\$65,170,000
	Mobilization & Indirect Field Cost		15%			\$9,775,500
	Subtotal- Construction Cost- Base (year 2003 dollars)					\$74,950,000
	Contingencies					
	Escalation to Midpoint of Construction- not included					
	Right of way Acquisition					
	Subtotal- Construction Cost (Not Escalated)					
	Project Conceptual & Preliminary Engineering					
	Final Engineering Design Cost					
	Construction Management & Inspection Costs @ 10%					
	Field Changed Condition					
	Owner Administration & Engineering					
	Total Estimated Project Cost					

Exclusions:

Real Estate

Central Operating Control System

Escalation to Mid-point of Construction

Environmental Mitigation

Engineering, CM, Inspection & owner's cost of administration

Contingencies

PROJECT: California High Speed Train EIR/EIS

Storage Yard & Maintenance Facility

San Diego

CONCEPTUAL CONSTRUCTION COST ESTIMATE

Item No.	DESCRIPTION	UNIT	UNIT COST (2003\$)	QUANTITY	Estimated Cost	Category Total Cost
1	Site Clearing					
	Site Clearing	HECT	\$7,700.00	14.70	\$113,190	
	Site Demolition	HECT	\$800,000.00	14.70	\$11,760,000	
						\$11,873,190
2	Earthwork					
	Grading Site- Cut & Fill 1 M Average	M3	\$7.50	147,000	\$1,102,500	
	Silt Fence	M	\$10.00	4,100	\$41,000	
						\$1,143,500
3	Paving & Surfacing					
	Driveway / Service Road- Along Yard	M2	\$40.00	16,800	\$672,000	
	Paved Area/Parking Spaces	M2	\$40.00	20,000	\$800,000	
	Maint. Path	M	\$150.00	3,200	\$480,000	
						\$1,952,000
4	Piped Utilities					
	Drainage & Sanitary- Track Drainage	M	\$164.00	16,500	\$2,706,000	
	Drainage & Sanitary- sewer system- allow	M	\$260.00	1,500	\$390,000	
	Connection to Exist. Lines	Allow	\$100,000.00	1	\$100,000	
	Sanitary Pump Station	EA	\$80,000.00	1	\$80,000	
	Oil/ Water Separator	EA	\$135,000.00	1	\$135,000	
	Exist. Utility Lines Relocation/Protection	HECT	\$2,100,000.00	14.70	\$30,870,000	
	Water Distribution- allow	Allow	\$200,000.00	1	\$200,000	
						\$34,481,000
5	Site Improvements					
	Alum. Chain Link Fence	M	\$110.00	4,100	\$451,000	
	Signs	Allow	\$30,000.00	1	\$30,000	
	Landscaping	Allow	\$100,000.00	1	\$100,000	
						\$581,000
6	Track work					
	Ballasted Track Incl. Ballast and subballast	M	\$430.00	16,500	\$7,095,000	
	Turnouts, no. 15 with Conc. Ties	EA	\$140,000.00	23	\$3,220,000	
	Diamond Crossover, no. 15 with Conc. Ties	EA	\$600,000.00	2	\$1,200,000	
	Heavy Duty Rubber Grade Crossing	Allow	\$300,000.00	1	\$300,000	
						\$11,815,000
7	Yard Electrical Work					
	Site Lighting, Distribution, High Mast Poles	EA	\$35,000.00	40.00	\$1,400,000	
	Electrical service to yard -- 480v	Allow	\$500,000.00	1	\$500,000	
	CCTV & Security System	Allow	\$200,000.00	1	\$200,000	
	Communication System	Allow	\$300,000.00	1	\$300,000	
						\$2,400,000
8	Traction Power					
	Substation	EA	\$5,000,000.00	1.0	\$5,000,000	
	OCS Incl. Hardware, Poles & Foundation	M	\$360.00	16,500	\$5,940,000	
						\$10,940,000
9	Train Control					
	Yard Train Control	Allow	\$2,500,000.00	1	\$2,500,000	
						\$2,500,000
10	Service and Inspection Facility Incl. Electrical & Mechanical Work					
	Service & Inspection Facility	M2	\$1,800.00	5,500	\$9,900,000	
	Inspection Pit	M	\$2,300.00	1,000	\$2,300,000	
	Inspection Pit Rail Support	M	\$945.00	1,000	\$945,000	
	Train Wash Building	M2	\$1,300.00	1,000	\$1,300,000	
	Wheel Repair Facility	M2	\$1,800.00	700	\$1,260,000	
						\$15,705,000
11a	Maintenance Shop Equipment, Tools and Supplies-					
	Storage Equipment	LS	\$280,000.00	1	\$280,000	
	Shop Equipment	LS	\$600,000.00	1	\$600,000	
	Shop Work Station	LS	\$60,000.00	1	\$60,000	
	Cleaning Equipment	LS	\$80,000.00	1	\$80,000	
	Car Component Repair & Test Equipment	LS	\$250,000.00	1	\$250,000	
	Wheel Truing Machine	Ea.	\$1,500,000.00	1	\$1,500,000	
	Welding Equipment	LS	\$60,000.00	1	\$60,000	
	Battery Equipment	LS	\$25,000.00	1	\$25,000	
	Prefab. Storage Buildings	LS	\$40,000.00	1	\$40,000	
	Traveling Manlifts	LS	\$200,000.00	1	\$200,000	
	Material Lift	LS	\$30,000.00	1	\$30,000	
	Bridge Crane - 3ton Capacity	Ea.	\$40,000.00	1	\$40,000	
	Jib Cranes- Various Capacity	Ea.	\$20,000.00	2	\$40,000	
	Forklifts	Ea.	\$35,000.00	4	\$140,000	
	Tools & Supplies	Allow	\$100,000.00	1	\$100,000	
						\$4,469,000
11b	Car Wash					
	Storage	LS	\$4,000.00	1	\$4,000	
	Central Vacuum Cleaning system	LS	\$40,000.00	1	\$40,000	
	Steam Cleaner Pressure Washer	LS	\$80,000.00	1	\$80,000	
	Car Wash Equipment Installation & Plumbing	LS	\$900,000.00	1	\$900,000	
						\$4,469,000
	Environmental Mitigation					
	Excluded					
						\$0
	Sub-Total					\$97,860,000
	Mobilization & Indirect Field Cost		15%			\$14,679,000
	Subtotal- Construction Cost- Base (year 2003 dollars)					\$112,540,000
	Contingencies					
	Escalation to Midpoint of Construction- not included					
	Right of way Acquisition					
	Subtotal- Construction Cost (Not Escalated)					
	Project Conceptual & Preliminary Engineering					
	Final Engineering Design Cost					
	Construction Management & Inspection Costs @ 10%					
	Field Changed Condition					
	Owner Administration & Engineering					
	Total Estimated Project Cost					

Exclusions:

Real Estate
Central Operating Control System
Escalation to Mid-point of Construction
Environmental Mitigation
Engineering, CM, Inspection & owner's cost of administration
Contingencies

PROJECT: California High Speed Train EIR/EIS**Storage Yard & Maintenance Facility****Bay Area (Los Banos)****CONCEPTUAL CONSTRUCTION COST ESTIMATE**

Item No.	DESCRIPTION	UNIT	UNIT COST (2003\$)	QUANTITY	Estimated Cost	Category Total Cost
1	Site Clearing					
	Site Clearing	HECT	\$7,700.00	10.00	\$77,000	
	Site Demolition	HECT	\$800,000.00	10.00	\$8,000,000	
						\$8,077,000
2	Earthwork					
	Grading Site- Cut & Fill 1M Average	M3	\$7.50	100,000	\$750,000	
						\$750,000
3	Paving & Surfacing					
	Driveway / Service Road	M2	\$40.00	16,800	\$672,000	
	Paved Area/Parking Spaces	M2	\$40.00	20,000	\$800,000	
	Maint. Path	M	\$150.00	3,200	\$480,000	
						\$1,952,000
4	Piped Utilities					
	Drainage & Sanitary- track drainage	M	\$164.00	12,100	\$1,984,400	
	Drainage & Sanitary- sewer system- allow	M	\$260.00	1,500	\$390,000	
	Connection to Exist. Lines	Allow	\$100,000.00	1	\$100,000	
	Sanitary Pump Station	EA	\$80,000.00	1	\$80,000	
	Oil/ Water Separator	EA	\$135,000.00	1	\$135,000	
	Exist. Utility Lines Relocation/Protection	HECT	\$2,100,000.00	10.00	\$21,000,000	
	Water Distribution- allow	Allow	\$200,000.00	1	\$200,000	
						\$23,889,400
5	Site Improvements					
	Alum. Chain Link Fence	M	\$110.00	2,000	\$220,000	
	Signs	Allow	\$30,000.00	1	\$30,000	
	Landscaping	Allow	\$100,000.00	1	\$100,000	
						\$350,000
6	Track work					
	Ballasted Track Incl. Ballast and subballast	M	\$430.00	12,100	\$5,203,000	
	Turnouts, no. 15 with Conc. Ties	EA	\$140,000.00	27	\$3,780,000	
	Diamond Crossover, no. 15 with Conc. Ties	EA	\$800,000.00	3	\$1,800,000	
	Heavy Duty Rubber Grade Crossing	Allow	\$300,000.00	1	\$300,000	
						\$11,083,000
7	Yard Electrical Work					
	Site Lighting, Distribution, High Mast Poles	EA	\$35,000.00	27.00	\$945,000	
	Electrical service to yard -- 480v	Allow	\$500,000.00	1	\$500,000	
	CCTV & Security System	Allow	\$200,000.00	1	\$200,000	
	Communication System	Allow	\$300,000.00	1	\$300,000	
						\$1,945,000
8	Traction Power					
	Double Ended SS	EA	\$5,000,000.00	1.0	\$5,000,000	
	OCS Incl. Hardware, Poles & Foundation	M	\$360.00	12,100	\$4,356,000	
						\$9,356,000
9	Train Control					
	Yard Train Control	Allow	\$3,000,000.00	1	\$3,000,000	
						\$3,000,000
10	Service and Inspection Facility Incl. Electrical & Mechanical Work					
	Service & Inspection Facility	M2	\$1,800.00	2,600	\$4,680,000	
	Inspection Pit	M	\$2,300.00	430	\$989,000	
	Inspection Pit Rail Support	M	\$945.00	430	\$406,350	
	Car Wash Building	M2	\$1,300.00	1,000	\$1,300,000	
	Wheel Repair Facility	M2	\$1,800.00	700	\$1,260,000	
						\$8,635,350
11a	Maintenance Shop Equipment, Tools and Supplies-					
	Storage Equipment	LS	\$280,000.00	1	\$280,000	
	Shop Equipment	LS	\$600,000.00	1	\$600,000	
	Shop Work Station	LS	\$60,000.00	1	\$60,000	
	Cleaning Equipment	LS	\$80,000.00	1	\$80,000	
	Car Component Repair & Test Equipment	LS	\$250,000.00	1	\$250,000	
	Wheel Truing Machine	Ea.	\$1,500,000.00	1	\$1,500,000	
	Welding Equipment	LS	\$60,000.00	1	\$60,000	
	Battery Equipment	LS	\$25,000.00	1	\$25,000	
	Prefab. Storage Buildings	LS	\$40,000.00	1	\$40,000	
	Traveling Manlifts	LS	\$200,000.00	1	\$200,000	
	Material Lift	LS	\$30,000.00	1	\$30,000	
	Bridge Crane - 3ton Capacity	Ea	\$40,000.00	1	\$40,000	
	Jib Cranes- Various Capacity	Ea.	\$20,000.00	2	\$40,000	
	Forklifts	Ea.	\$35,000.00	4	\$140,000	
	Tools & Supplies	Allow	\$100,000.00	1	\$100,000	
						\$4,469,000
11c	Car Wash					
	Storage	LS	\$4,000.00	1	\$4,000	
	Central Vacuum Cleaning system	LS	\$40,000.00	1	\$40,000	
	Steam Cleaner Pressure Washer	LS	\$80,000.00	1	\$80,000	
	Car Wash Equipment Installation & Plumbing	LS	\$900,000.00	1	\$900,000	
						\$4,469,000
	Environmental Mitigation					
	Excluded					
						\$0
	Sub-Total					\$73,510,000
	Mobilization & Indirect Field Cost		15%			\$11,026,500
	Subtotal- Construction Cost- Base (year 2003 dollars)					\$84,540,000
	Contingencies					
	Escalation to Midpoint of Construction- not included					
	Right of way Acquisition					
	Subtotal- Construction Cost (Not Escalated)					
	Project Conceptual & Preliminary Engineering					
	Final Engineering Design Cost					
	Construction Management & Inspection Costs @ 10%					
	Field Changed Condition					
	Owner Administration & Engineering					
	Total Estimated Project Cost					

Exclusions:

Real Estate

Central Operating Control System

Escalation to Mid-point of Construction

Engineering, CM, Inspection & owner's cost of administration

Contingencies

PROJECT: California High Speed Train EIR/EIS**Storage Yard & Main Repair Facility****Central Valley****CONCEPTUAL CONSTRUCTION COST ESTIMATE**

Item No.	DESCRIPTION	UNIT	UNIT COST (2003\$)	QUANTITY	Estimated Cost	Category Total Cost
1	Site Clearing					
	Site Clearing	HECT	\$7,700.00	39.84	\$306,768	
	Site Demolition	HECT	\$800,000.00	39.84	\$31,872,000	
						\$32,178,768
2	Earthwork					
	Grading Site- Cut & Fill 1M Average	M3	\$7.50	398,400	\$2,988,000	
	Silt Fence	M	\$10.00	5,200	\$52,000	
						\$3,040,000
3	Paving & Surfacing					
	Driveway / Service Road	M2	\$40.00	20,800	\$832,000	
	Paved Area/Parking Spaces -Allow	M2	\$40.00	30,000	\$1,200,000	
						\$2,032,000
4	Piped Utilities					
	Drainage & Sanitary- track drainage	M	\$164.00	25,300	\$4,149,200	
	Drainage & Sanitary- sewer system- allow	M	\$260.00	3,000	\$780,000	
	Connection to Exist. Lines	Allow	\$100,000.00	1	\$100,000	
	Sanitary Pump Station	EA	\$80,000.00	1	\$80,000	
	Oil/ Water Separator	EA	\$135,000.00	1	\$135,000	
	Exist. Utility Lines Relocation/Protection	HECT	\$2,100,000.00	39.84	\$83,664,000	
	Water Distribution- allow	Allow	\$200,000.00	1	\$200,000	
						\$89,108,200
5	Site Improvements					
	Alum. Chain Link Fence	M	\$110.00	5,200	\$572,000	
	Signs	Allow	\$40,000.00	1	\$40,000	
	Landscaping	Allow	\$100,000.00	1	\$100,000	
						\$712,000
6	Track work					
	Ballasted Track Incl. Ballast and subballast	M	\$430.00	25,300	\$10,879,000	
	Turnouts, no. 15 with Conc. Ties	EA	\$140,000.00	43	\$6,020,000	
	Diamond Crossover, no. 15 with Conc. Ties	EA	\$600,000.00	2	\$1,200,000	
	Heavy Duty Rubber Grade Crossing	Allow	\$500,000.00	1	\$500,000	
						\$18,599,000
7	Yard Electrical Work					
	Site Lighting, Distribution, High Mast Poles	EA	\$35,000.00	105.00	\$3,675,000	
	Electrical service to yard - 480v	Allow	\$500,000.00	1	\$500,000	
	CCTV & Security System	Allow	\$400,000.00	1	\$400,000	
	Communication System	Allow	\$400,000.00	1	\$400,000	
						\$4,975,000
8	Traction Power					
	Substation	EA	\$5,000,000.00	1.0	\$5,000,000	
	OCS Incl. Hardware, Poles & Foundation	M	\$360.00	25,300	\$9,108,000	
						\$14,108,000
9	Train Control					
	Yard Train Control	Allow	\$4,500,000.00	1	\$4,500,000	
						\$4,500,000
10	Service and Inspection Facility Incl. Electrical & Mechanical Work					
	Service & Inspection Facility	M2	\$1,800.00	4,200	\$7,560,000	
	Inspection Pit	M	\$2,300.00	840	\$1,932,000	
		M	\$945.00	840	\$793,800	
	Wheel Truer	M2	\$1,800.00	500	\$900,000	
	Wheel Shop	M2	\$1,600.00	6,300	\$10,080,000	
	Material Inventory & Distribution	M2	\$1,600.00	6,300	\$10,080,000	
	Running Repair & Truck Shop	M2	\$1,800.00	13,200	\$23,760,000	
	Heavy Repair, Support Shop & Overhaul	M2	\$1,800.00	9,000	\$16,200,000	
						\$71,305,800
11a	Maintenance Shop Equipment, Tools and Supplies-					
	Storage Equipment	LS	\$280,000.00	1	\$280,000	
	Dock Lifts	LS	\$110,000.00	1	\$110,000	
	Rail Car Spray Booth	LS	\$400,000.00	1	\$400,000	
	Shop Work Station	LS	\$60,000.00	1	\$60,000	
	Shop Equipment	LS	\$600,000.00	1	\$600,000	
	Sheet Metal Equipment	LS	\$110,000.00	1	\$110,000	
	Cleaning Equipment	LS	\$80,000.00	1	\$80,000	
	Steam Cleaner Pressure Washer	LS	\$40,000.00	1	\$40,000	
	Car Component Repair & Test Equipment	LS	\$250,000.00	1	\$250,000	
	Wheel Truing Machine	Ea.	\$1,500,000.00	1	\$1,500,000	
	Welding Equipment	LS	\$60,000.00	1	\$60,000	
	Battery Equipment	LS	\$25,000.00	1	\$25,000	
	Prefab. Storage Buildings	LS	\$40,000.00	1	\$40,000	
	Traveling Manlifts	LS	\$200,000.00	1	\$200,000	
	Material Lift	LS	\$30,000.00	1	\$30,000	
	Car Hoist System	LS	\$1,200,000.00	1	\$1,200,000	
	Potable car Hoist System	LS	\$210,000.00	1	\$210,000	
	Truck Repair Hoist	LS	\$400,000.00	1	\$400,000	
	Jacking Carriage	Ea.	\$50,000.00	1	\$50,000	
	Bridge Crane - 3ton Capacity	Ea.	\$40,000.00	2	\$80,000	
	Bridge Crane - 10 ton Capacity	Ea.	\$110,000.00	2	\$220,000	
	Monorails	Ea.	\$35,000.00	3	\$105,000	
	Jib Cranes- Various Capacity	Ea.	\$20,000.00	6	\$120,000	
	Turntables	Ea.	\$60,000.00	10	\$600,000	
	Forklifts	Ea.	\$35,000.00	4	\$140,000	
	Tools & Supplies	Allow	\$200,000.00	1	\$200,000	
						\$7,110,000
	Environmental Mitigation					
	Excluded					
						\$0
	Sub-Total					\$247,670,000
	Mobilization & Indirect Field Cost		15%			\$37,150,500
	Subtotal- Construction Cost- Base (year 2003 dollars)					\$284,820,000
	Contingencies					
	Escalation to Midpoint of Construction- not included					
	Right of way Acquisition					
	Subtotal- Construction Cost (Not Escalated)					
	Project Conceptual & Preliminary Engineering					
	Final Engineering Design Cost					
	Construction Management & Inspection Costs @ 10%					
	Field Changed Condition					
	Owner Administration & Engineering					
	Total Estimated Project Cost					

Exclusions:

Real Estate
Central Operating Control System
Escalation to Mid-point of Construction
Engineering, CM, Inspection & owner's cost of administration
Contingencies